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ΣΧΟΛΗ ΧΗΜΙΚΩΝ ΜΗΧΑΝΙΚΩΝ

ΟΜΙΛΙΑ

Some old and some new results at the interface of machine learning and engineering modeling

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Περίληψη
Learning models from data (or improving "mediocre" models through data) is a process that traditionally involves the human mind, through what we call "physical understanding"; yet it can also be attempted in automated, computer-assisted ways and this is a major modern trend. I will revisit some results from the previous heyday of neural networks (late 80s) and then discuss some new developments in modeling along data-driven lines. I will focus on the question: when is it that two models can be mapped to each other- when are they, practically, the same model? Alternatively: how can we reconcile information from different observations of the same process, or fuse data from different measuring instruments?

I will show developments from data mining/manifold learning as well as neural network models that attempt to solve these tasks.